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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/627,115

07/25/2003

Jiun-Ren Lai

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EXAMINER

GRAYBILL, DAVID E

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

CT

Office Action Summary

Application No.

10/627,115

Applicant(s)

LAI, JIUN-REN

Examiner

David E. Graybill

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-12 and 20-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-12 and 20-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Applicant's election without traverse of Group II, claims 10-12 and 20-26, in the reply filed on 12-17-4 is acknowledged.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention. The undescribed subject matter is the entire claim 23. Specifically, one skilled in the art would not be able to make a pitch of the gate conductors less than pitch that a photolithography process will allow because one would not know pitch that a photolithography process will allow or how to make a pitch of the gate conductors less than this unknown pitch. Further confounding, in the specification, at page 6, lines 29-30, applicant discloses that the pitch of the gate conductors is, in fact, allowed by a photolithography process.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is insufficient antecedent basis for the language, "pitch that a photolithography process will allow."

The following is a quotation of MPEP 2111.01 [R-1]:

THE WORDS OF A CLAIM MUST BE GIVEN THEIR "PLAIN MEANING" UNLESS THEY ARE DEFINED IN THE SPECIFICATION

While the ** claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) (discussed below)>; MSM Investments Co. v. Carolwood Corp., 259 F.3d 1335, 1339-40, 59 USPQ2d 1856, 1859-60 (Fed. Cir. 2001). One must bear in mind that, especially in nonchemical cases, the words in a claim are generally not limited in their meaning by what is shown or disclosed in the specification. It is only when the specification provides definitions for terms appearing in the claims that the specification can be used in interpreting claim language. In re Vogel, 422 F.2d 438, 441, 164 USPQ 619, 622 (CCPA 1970).

The scope of the claim is unclear because the language, "a pitch of the gate conductors is less than pitch that a photolithography process will allow," and, "pitch that a photolithography process will allow," is not clearly defined in the disclosure, and it otherwise has no plain meaning.

Claim 23 has not been rejected over the prior art because, in light of the 35 U.S.C. 112 rejections supra, there is a great deal of confusion and uncertainty as to the proper interpretation of the limitations of the claim; hence, it would not be proper to reject the claim on the basis of prior art. As

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stated in *In re Steele*, 305 F.2d 859, 134 USPQ 292 (CCPA 1962), a rejection should not be based on considerable speculation about the meaning of terms employed in a claim or assumptions that must be made as to the scope of the claims. Also see *In re Wilson*, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970) (if no reasonably definite meaning can be ascribed to certain claim language, the claim is indefinite, not obvious). See also MPEP 2143.03 and 2173.06.

In the rejections *infra*, generally, reference labels are recited only for the first recitation of identical claim elements.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10-12 and 20-22 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ha (6369008).

At column 3, line 66 to column 4, line 5 Ha discloses
22. (Original) A structure comprising: a plurality of gate conductors 30 laterally spaced apart on a substrate 10; a plurality of first dielectric portions 50 laterally spaced apart on the substrate, wherein first dielectric portions

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are laterally interspersed between gate conductors; and a plurality of second dielectric portions 20, each of the second dielectric portions being disposed between the substrate and one of the gate conductors.

Also, Ha discloses the structure 10 formed by the process of claims 10-21. Although Ha does not appear to explicitly disclose the process limitations of claims 10-21 the structure 10 of Ha inherently possesses any structural characteristics imparted by the process limitation. See *In re Fitzgerald, Sanders, and Bagheri*, 205 USPQ 594 (CCPA 1980). To further clarify, because the transitional claim language "comprising" is inclusive of additional process steps other than the particular recited steps, the scope of the process claims encompasses a step of removing all of any structure imparted by the process limitations to make a final product having only the claimed "structure" and none of any structure imparted by the process limitations.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ha.

Ha is applied for the same reasons it is applied to claims 10-12 and 20-22.

Further, Ha discloses wherein the first dielectric is a pad oxide and the second dielectric is a gate oxide.

However, Ha does not appear to explicitly disclose wherein a thickness of the first dielectric is different than a thickness of the second dielectric; wherein the pad oxide is thicker than the gate oxide.

Notwithstanding, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose these particular dimensions because applicant has not disclosed that, in view of the applied prior art, the dimensions are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical, and it appears prima facie that the process would possess utility using another dimension. Indeed, it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531

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F.2d 1048, 189 USPQ 143 (CCPA 1976); Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Claims 10-12, 20-22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boardman (5196357) and Takahashi (5698880).

At column 3, lines 15-18 and 37-39; and column 4, lines 39-50, Boardman discloses a structure comprising: a gate conductor 45 on a "substrate"; a plurality of first dielectric portions 35 laterally spaced apart on the substrate; and a second dielectric portion 44, the second dielectric portion being disposed between the substrate and the gate conductor; wherein a thickness of the first dielectric is different than a thickness of the second dielectric; wherein the first dielectric is a pad oxide and the second dielectric is a gate oxide; wherein the pad oxide is thicker than the gate oxide.

Also, Boardman discloses the structure "substrate" formed by the process of claims 10-21. Although Boardman does not appear to explicitly disclose the process limitations of claims 10-21 the "substrate" of Boardman inherently possesses any structural characteristics imparted by the process limitation. See In re Fitzgerald, Sanders, and Bagheri, 205 USPQ 594 (CCPA 1980). To further clarify, because the transitional claim language

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"comprising" is inclusive of additional process steps other than the particular recited steps, the scope of the process claims encompasses a step of removing all of any structure imparted by the process limitations to make a final product having only the claimed "structure" and none of any structure imparted by the process limitations.

However, Boardman does not appear to explicitly disclose a plurality of gate conductors laterally spaced apart on the substrate; wherein the first dielectric portions are laterally interspersed between gate conductors; and a plurality of second dielectric portions, each of the second dielectric portions being disposed between the substrate and one of the gate conductors. Nonetheless, as cited, Boardman discloses that the structure is a MOSFET. And at column 1, lines 12-20; column 7, line 61 to column 8, line 9; and column 11, lines 47-61; Takahashi discloses a plurality of MOSFETs laterally spaced apart on a substrate. Moreover, it would have been obvious to combine the disclosure of Takahashi with the disclosure of Boardman because it would facilitate manufacture of a power MOSFET.

The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited primarily to show inventions similar to the instant invention.

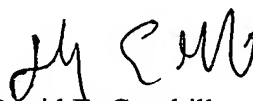
For information on the status of this application applicant should check PAIR:

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Alternatively, applicant may contact the File Information Unit at (703) 308-2733. Telephone status inquiries should not be directed to the examiner. See MPEP 1730VIC, MPEP 203.08 and MPEP 102.

Any other telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.
The fax phone number for group 2800 is (703) 872-9306.



David E. Graybill
Primary Examiner
Art Unit 2827

D.G.
25-Feb-05

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